

Remarks

This REPLY is in response to the Office Action mailed January 9, 2008. A Petition for Extension of Time is enclosed herewith, together with the appropriate fee.

I. Summary of Examiner's Rejections

Prior to the Office Action mailed January 9, 2008, Claims 1-25 were pending in the Application. In the Office Action, the Title was objected to as being non-descriptive. Claims 7, 9, 11, 19, 21 and 23 were objected to for various informalities. Claims 1-2, 4-14 and 16-25 were rejected under 35 U.S.C. 102(b) as being anticipated by Rational Software Corporation's product Rational PureCoverage, 2001 (hereafter PureCoverage). Claims 3 and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over PureCoverage as applied to Claim 1, and further in view of "Web Management with Microsoft Visual SourceSafe 5.0, 1997" (hereafter SourceSafe).

II. Summary of Applicant's Amendments

The present Reply amends the Title of the Specification; and Claims 1, 7, 9, 11, 12, 13, 19, 21, 23, 24 and 25, leaving for the Examiner's present consideration Claims 1-25.

III. Specification

In the Office Action mailed January 9, 2008, the Title was objected to as being non-descriptive. Accordingly, the Title has been amended as shown above. Reconsideration is respectfully requested. Applicant respectfully submits that no new matter is being added.

IV. Objections to the Claims

In the Office Action mailed January 9, 2008, Claims 7, 9, 11, 19, 21 and 23 were objected to for various informalities. Accordingly, Claims 7, 9, 11, 19, 21 and 23 have been amended as shown above. Reconsideration thereof is respectfully requested.

V. Claim Rejections under 35 U.S.C. §102(b)

In the Office Action mailed January 9, 2008, Claims 1-2, 4-14 and 16-25 were rejected under 35 U.S.C. 102(b) as being anticipated by PureCoverage.

Claim 1

Claim 1 has been amended to more clearly define the embodiment therein. As amended, Claim 1 currently defines:

1. *(Currently Amended) A system for software source code analysis, comprising:*
 - a plugin framework that includes a plurality of software interfaces to allow software test tools to be plugged into the system in a tool-agnostic manner;*
 - a software interface to a source code management tool, which can be used to receive information from the source code management tool to identify changes that have been made by developers to source code during a specified interval of time or during a set of relative changes, independent of any particular source code management tool implementation;*
 - a software interface to a code coverage tool, which can be used to receive information from the code coverage tool that is then used to identify source code that has been exercised by the system during a test run, independent of any particular code coverage tool implementation;*
 - a software interface for identifying which source files are exercised in a software product by a particular software test, using code coverage mapping,*
 - a software interface for identifying which tests have failed during a test execution cycle for a particular software product, independent of any particular testing technology or test execution tool; and*
 - a bug inspection analyzer that determines a failure-to-change intersection point by integrating the information from the plurality of software interfaces, including both the software interface to the source code management tool and the software interface to the code coverage tool to determine*
 - which of the tests failed,*
 - which of the source code files of the target software product are exercised by the failing tests as determined by the information received from the code coverage tool, and*
 - which of the files identified thereby have been changed by a developer, during the specified interval of time or the specified set of relative changes, as determined by the information received from the source code management tool.*

Claim 1, as currently amended, comprises a plugin framework that includes a plurality of software interfaces to allow software test tools to be plugged into the system in a tool-agnostic manner. The interfaces comprise a software interface to a source code management tool, and a software interface to a code coverage tool. The source code management tool provides information to identify changes that have been made by developers to the source code during a specified interval of time or set of relative changes. The code coverage tool provides information to identify source code that has been exercised by the system during a test run. The system determines a failure-to-change intersection point by determining which of the tests failed; which of the source code files of the target software product are exercised by the failing tests (as provided by the code coverage tool); and which of the files identified thereby have been changed by a developer during the specified interval of time or set of relative changes (as provided by the source code management tool). This failure-to-change information can be used to generate bug reports for use in testing or analyzing the operation of the software application.

The advantages of the embodiment defined by Claim 1 include that the system is tool-agnostic, in that the software interfaces allow a variety of source code management or code coverage tools to be plugged in to the system. This allows testing technologies to be combined, and tools to be replaced, such as allowing test-level code coverage information from an CCA tool to be used with line-level product changes from an SCM tool. The failure-to-change information can also be determined for a specified interval of time, or a specified set of relative changes. For example, information as to the health of a software product and the test criteria it passes or fails can be compared at a first time (e.g. "yesterday"), when the product may have satisfied all test criteria, with the health of the product at a second time (e.g. "today") when the same criteria may be failing. This information can then be used to help narrow down or identify specific product failures to a particular change or set of changes in the software code.

PureCoverage discloses a source code testing tool for use in viewing, annotating and analyzing software applications under test. It appears that a PureCoverage Viewer provides information about a software application, the software functions therein, and the degree to which each function is called when the application is executed. (Page 1). PureCoverage also appears to support options such as allowing multiple source code files to be accessed and tested. (Page

2). It also appears that a Purify Viewer can be used to view and modify a source code file. (Page 5). Purify Viewer appears to allow a software developer to make, run and debug a source code file. (Page 5). Messages can then be provided to the software developer to assist them in debugging their software application. (Page 6).

Applicant respectfully submits that, based on the above description, PureCoverage (and Purify Viewer) appears to disclose one or more systems and/or graphical interfaces for use by a software developer in debugging software source code, or determining the utilization of functions within their software source code. However, while PureCoverage appears to allow access to source code, Applicant respectfully submits that PureCoverage does not appear to provide a software interface to a source code management tool or SCM (some examples of which include Perforce, Sourcesafe, and CVS). The SCM can be used to provide information to identify changes that have been made by developers to source code during a specified interval of time or during a set of relative changes.

Furthermore, while PureCoverage appears to describe a viewer for showing either the utilization of functions in a source code file, or messages in a file being debugged, Applicant respectfully submits that PureCoverage does not appear to disclose determining a failure-to-change intersection point by integrating the information from the plurality of software interfaces, including both the software interface to the source code management tool and the software interface to the code coverage tool to determine (a) which of the tests failed, (b) which of the source code files of the target software product are exercised by the failing tests as determined by the information received from the code coverage tool, and (c) which of the files identified thereby have been changed by a developer, during the specified interval of time or the specified set of relative changes, as determined by the information received from the source code management tool.

Claim 1 has been amended to more clearly define each of these features. In view of the above comments, Applicant respectfully submits that Claim 1, as amended, is neither anticipated by, nor obvious in view of, the cited references, and reconsideration thereof is respectfully requested.

Claims 12, 13, 24 and 25

The comments provided above with respect to Claim 1 are hereby incorporated by reference. Claims 12, 13, 24 and 25 have been similarly amended by the current Reply to more clearly define the embodiments therein. For similar reasons as provided above with respect to Claim 1, Applicant respectfully submits that Claims 12, 13, 24 and 25, as amended, are likewise neither anticipated by, nor obvious in view of the cited references, and reconsideration thereof is respectfully requested.

Claims 2, 4-11, 14 and 16-23

Claims 2, 4-11, 14 and 16-23 depend from and include all of the features of Claim 1 or Claim 13. Claims 2, 4-11, 14 and 16-23 are not addressed separately, but it is respectfully submitted that these claims are allowable as depending from an allowable independent claim, and further in view of the amendments to the independent claims and the comments provided above. Reconsideration thereof is respectfully requested.

VI. Claim Rejections under 35 U.S.C. §103(a)

In the Office Action mailed January 9, 2008, Claims 3 and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over PureCoverage as applied to Claim 1, and further in view of SourceSafe.

The comments provided above with respect to Claim 1 are hereby incorporated by reference. Claims 3 and 15 depend from and include all of the features of Claim 1. Claims 3 and 15 are not addressed separately, but it is respectfully submitted that these claims are allowable as depending from an allowable independent claim, and further in view of the amendments to the independent claims and the comments provided above. Reconsideration thereof is respectfully requested.

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VII. Conclusion

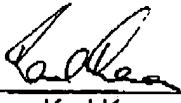
In view of the above amendments and remarks, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and reconsideration thereof is respectfully requested. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

Enclosed is a PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. §1.136 for extending the time to respond up to and including June 9, 2008.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this Reply, including any fee for extension of time, which may be required.

Respectfully submitted,

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